

1. **(Cancelled)**

2. **(Previously Presented)** The system of claim 4, wherein:  
the HA systems are associated with a supplier of products;  
the external systems comprise external ordering systems associated with customers;  
the message bus comprises the Internet;  
the requests comprise product orders from customers;  
the planning information comprises available-to-promise (ATP) supply information associated with one or more products; and  
the APS engine comprises a demand fulfillment engine operable to promise ATP supply to a customer in response to the product orders.

3. **(Previously Presented)** The system of claim 4, wherein the HA server in each HA system is further operable to communicate modifications to the planning information made by the associated APS engine to the other HA systems.

4. **(Currently amended)** A high availability planning and scheduling system, comprising:  
a plurality of high availability (HA) systems coupled to one or more external systems using a message bus, each HA system including:  
an HA server operable to receive and queue requests received from the external systems; and  
an advanced planning and scheduling (APS) engine operable to:  
receive a request from the HA server;  
process the request using planning information stored in memory of the HA system;  
modify the planning information according to the processing of the request; and  
generate a response to the external system from which the request originated; and

a message manager operable to direct each request received from an external system to an appropriate HA system using the message bus,

wherein:

the plurality of HA systems comprise:

a first primary HA system operable to process requests requiring modification of the planning information; and

a second primary HA system operable to replace the first primary HA system and process requests requiring modification of the planning information;  
and

one or more secondary HA systems operable to process requests not requiring modification of the planning information; ~~and~~

the second primary HA system further operable to communicate planning information to one or more of the secondary HA systems after replacing the first primary HA system.

~~the message manager is operable to:~~

~~direct requests received from external systems and requiring modification of the planning information to the primary HA system; and~~

~~direct requests received from external systems and not requiring modification of the planning information to one of the secondary HA systems.~~

5. **(Original)** The system of claim 4, wherein:

the primary HA system is further operable to communicate information to the secondary HA systems relating to modifications made to the planning information by the APS engine of the primary HA system; and

each secondary HA system is operable to modify the planning information stored in memory associated with the secondary HA system according to the information received from the primary HA system.

6. **(Original)** The system of claim 4, wherein at least one of the secondary HA systems is operable to become the primary HA system in the event the primary HA system becomes unavailable.

7. **(Original)** The system of claim 4, wherein the message manager is further operable to direct each request not requiring modification of the planning information to a particular one of a plurality of secondary HA systems based at least on the number of requests that are queued in the particular secondary HA system.

8. **(Original)** The system of claim 4, wherein:  
the requests requiring modification of the planning information comprise product orders; and  
the requests not requiring modification of the planning information comprise product inquiries.

9. **(Previously Presented)** The system of claim 4, wherein each HA system further comprises a transform library operable to:  
receive the response from the APS engine and modify the response to a format appropriate for the external system for which the response was generated;  
and  
receive a request from an external system and modify the request to a format appropriate for the APS engine included in the HA system.

10. **(Previously Presented)** The system of claim 4, wherein:  
a first HA system includes a first version of the APS engine;  
a second HA system includes a second version of the APS engine;  
each request received from the external systems indicates the version of the APS engine with which the request is associated; and  
the message manager is further operable to communicate each request to either the first HA system or the second HA system based on the version indicated in the request.

11.-14. **(Cancelled)**

15. **(Currently amended)** A method for high availability planning and scheduling, comprising:

receiving a request received from one or more external systems at a first primary high availability (HA) system using a message bus;

processing the request using an advanced planning and scheduling (APS) engine and planning information stored in memory of the first primary HA system;

modifying the planning information according to the processing of the request;

generating a response to the external system;

communicating the response to the external system;

generating a replication message including information reflecting the modifications made to the planning information by the first primary HA system; and

communicating the replication message to each secondary HA system coupled to the external system using the message bus and operable to process requests from the external system, the secondary HA system further operable to modify a local copy of the planning information stored in memory of the secondary HA system according to the replication message,

wherein:

the first primary HA system processes requests requiring modification of the planning information;

the secondary HA system processes requests not requiring modification of the planning information; and

the method further comprises:

replacing the first primary HA system with a second primary HA system such that the first primary HA system ceases processing requests from the external systems and the second primary HA system begins processing requests from the external systems; and

communicating planning information from the second primary HA system to the secondary HA system after replacing the first primary HA system with the second primary HA system, the secondary HA system operable to store the

planning information in memory of the secondary HA system and further operable to begin processing requests using an APS engine included in the secondary HA system and the planning information stored in memory of the secondary HA system.

~~directing requests received from external systems and requiring modification of the planning information to the primary HA system; and~~

~~directing requests received from external systems and not requiring modification of the planning information to the secondary HA system.~~

16. **(Original)** The method of claim 15, further comprising directing requests not requiring modification of the planning information to a particular one of a plurality of secondary HA systems based at least on the number of requests that are queued in the particular secondary HA system.

17. **(Original)** The method of claim 15, wherein:  
the requests requiring modification of the planning information comprise product orders; and  
the requests not requiring modification of the planning information comprise product inquiries.

18. **(Currently amended)** The method of claim 15, further comprising replacing the first primary HA system with the secondary HA system in the event that the first primary HA system becomes unavailable.

19. **(Previously Presented)** The method of claim 15, further comprising:  
receiving the request and modifying the request to a format appropriate for the APS engine; and  
receiving the response and modifying the response to a format appropriate for the external system.

20. **(Previously Presented)** The method of claim 15, wherein:  
the external system comprises an external ordering system associated with customers;  
the request comprises product orders from customers;  
the planning information comprises available-to-promise (ATP) supply information associated with one or more products; and  
the APS engine comprises a demand fulfillment engine operable to promise ATP supply to a customer in response to the product orders.

21. **(Cancelled)**

22. **(Currently amended)** High availability planning and scheduling software embodied in a computer-readable medium and operable to:  
receive a request received from one or more external systems at a first primary high availability (HA) system using a message bus;  
process the request using an advanced planning and scheduling (APS) engine and planning information stored in memory of the first primary HA system;  
modify the planning information according to the processing of the request;  
generate a response to the external system;  
communicate the response to the external system;  
generate a replication message including information reflecting the modifications made to the planning information by the first primary HA system;  
communicate the replication message to each secondary HA system coupled to the external system using the message bus and operable to process requests from the external system, the secondary HA system further operable to modify a local copy of the planning information stored in memory of the secondary HA system according to the replication message;  
direct requests received from external systems and requiring modification of the planning information to the primary HA system; and  
direct requests received from external systems and not requiring modification of the planning information to the secondary HA system; and

replace the first primary HA system with a second primary HA system such that the first primary HA system ceases processing requests from the external systems and the second primary HA system begins processing requests from the external systems; and

communicate planning information from the second primary HA system to the secondary HA system after replacing the first primary HA system with the second primary HA system, the secondary HA system operable to store the planning information in memory of the secondary HA system and further operable to begin processing requests using an APS engine included in the secondary HA system and the planning information stored in memory of the secondary HA system.

23. **(Original)** The software of claim 22, further operable to direct requests not requiring modification of the planning information to a particular one of a plurality of secondary HA systems based at least on the number of requests that are queued in the particular secondary HA system.

24. **(Original)** The software of claim 22, wherein:  
the requests requiring modification of the planning information comprise product orders; and  
the requests not requiring modification of the planning information comprise product inquiries.

25. **(Currently amended)** The software of claim 22, further operable to replace the first primary HA system with the secondary HA system in the event that the first primary HA system becomes unavailable.

26. **(Currently amended)** The software of claim 22, further operable to:  
receive the request and modify the request to a format appropriate for the APS engine; and

receive the response and modify the response to a format appropriate for the external system.

27. **(Currently amended)** The software of claim 22, wherein:  
the external system comprises an external ordering system associated with customers;  
the request comprises product orders from customers;  
the planning information comprises available-to-promise (ATP) supply information associated with one or more products; and  
the APS engine comprises a demand fulfillment engine operable to promise ATP supply to a customer in response to the product orders.

28. **(Currently amended)** A system for high availability planning and scheduling, comprising:  
means for receiving a request received from one or more external systems at a first primary high availability (HA) system using a message bus;  
means for processing the request using an advanced planning and scheduling (APS) engine and planning information stored in memory of the first primary HA system;  
means for modifying the planning information according to the processing of the request;  
means for generating a response to the external system;  
means for communicating the response to the external system;  
means for generating a replication message including information reflecting the modifications made to the planning information by the first primary HA system;  
and  
means for communicating the replication message to each secondary HA system coupled to the external system using the message bus and operable to process requests from the external system, the secondary HA system further operable to modify a local copy of the planning information stored in memory of the secondary HA system according to the replication message,



wherein:

the first primary HA system processes requests requiring modification of the planning information;

the secondary HA system processes requests not requiring modification of the planning information; and

the system further comprises:

means for replacing the first primary HA system with a second primary HA system such that the first primary HA system ceases processing requests from the external systems and the second primary HA system begins processing requests from the external systems; and

means for communicating planning information from the second primary HA system to the secondary HA system after replacing the first primary HA system with the second primary HA system, the secondary HA system operable to store the planning information in memory of the secondary HA system and further operable to begin processing requests using an APS engine included in the secondary HA system and the planning information stored in memory of the secondary HA system.

~~means for directing requests received from external systems and requiring modification of the planning information to the primary HA system; and~~

~~means for directing requests received from external systems and not requiring modification of the planning information to the secondary HA system.~~

29. **(Currently amended)** A high availability planning and scheduling system, comprising:

a plurality of high availability (HA) systems associated with a supplier of products and coupled to one or more external ordering systems using a message bus, each HA system including:

an HA server operable to receive and queue requests received from the external systems; and

a demand fulfillment engine operable to:

receive a request from the HA server;  
process the request using available-to-promise (ATP) supply information associated with one or more products and stored in memory of the HA system;  
modify the ATP supply information according to the processing of the request; and  
generate a response to the external system from which the request originated;

the plurality of HA systems including a first primary HA system operable to process product orders, a second primary HA system operable to replace the first primary HA system and process orders, and one or more secondary HA systems operable to process product inquiries;

the second primary HA system further operable to communicate planning information to one or more of the secondary HA systems after replacing the first primary HA system;

the first primary HA system further operable to communicate information to the secondary HA systems relating to modifications made to the ATP supply information by the APS engine of the first primary HA system resulting from processing of product orders; and

each secondary HA system operable to modify the ATP supply information stored in memory associated with the secondary HA system according to the information received from the first primary HA system and further operable to ~~become~~ replace the first primary HA system in the event the first primary HA system becomes unavailable. ~~unavailable~~; and

~~a message manager operable to:~~

~~direct product orders to the primary HA system; and~~

~~direct product inquiries to one of the secondary HA systems.~~

30. **(New)** The system of claim 4, wherein the message manager is operable to:

direct requests received from external systems and requiring modification of the planning information to one of the primary HA systems; and

direct requests received from external systems and not requiring modification of the planning information to one of the secondary HA systems.

31. **(New)** The method of claim 15, further comprising:

directing requests received from external systems and requiring modification of the planning information to one of the primary HA systems; and

directing requests received from external systems and not requiring modification of the planning information to the secondary HA system.

32. **(New)** The system of claim 28, further comprising:

means for directing requests received from external systems and requiring modification of the planning information to one of the primary HA systems; and

means for directing requests received from external systems and not requiring modification of the planning information to the secondary HA system.

33. **(New)** The system of claim 28, further comprising a message manager operable to:

direct product orders to one of the primary HA systems; and

direct product inquiries to one of the secondary HA systems.